

What is claimed is:

1. A tubing injector for injecting coiled tubing into a subsea wellhead or flowline, comprising:

5 a traction device including opposed grippers laterally moveable with respect to the coiled tubing to move a respective chain link member of an endless loop chain into gripping engagement with the coiled tubing;

a drive unit for powering the endless loop chain, the drive unit including a gear case;

10 a plurality of roller bearings each acting between a respective link member and a gripper;

pairs of outboard bearing assemblies for guiding movement of the endless loop chain;

15 a pressure compensating device for compensating pressure of lubricant within at least one of the gear case and the pairs of outboard bearing assemblies, such that lubricant fluid pressure is functionally related to subsea pressure.

20 2. A tubing injector as defined in Claim 1, wherein a controlled pressure differential exists across a seal which seals the lubricant from the subsea conditions.

25 3. A tubing injector as defined in Claim 1, wherein the pressure compensating device includes a piston moveable within a bore in the shaft of each outboard bearing assembly, with one face of the piston exposed to lubricant and an opposing face of the piston exposed to subsea conditions.

4. A tubing injector as defined in Claim 3, further comprising:
a seal for maintaining substantially sealed engagement between the piston and the shaft to fluidly isolate the lubricant from the subsea conditions.

5. A tubing injector as defined in Claim 3, further comprising:
a biasing member within the shaft for exerting a selected bias on the piston.

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5 6. A tubing injector as defined in Claim 1, wherein the pressure
compensating device includes a diaphragm separating lubricant from subsea
conditions, such that movement of the diaphragm provides pressure
compensation to the lubricant.

10 7. A tubing injector as defined in Claim 1, wherein the pressure
compensating device is secured to an injector housing, and air spaces within the
gear case and within the pairs of outboard bearing assemblies are substantially
filled with lubricant prior to deployment, and the differential pressure on the
lubricant may be controlled to be higher than, equal to, or lower than the
15 pressure of the subsea environment.